

# **Braintree's Stormwater Program**



## **Town of Braintree Stormwater Division**

James Arsenault – Director of Public Works

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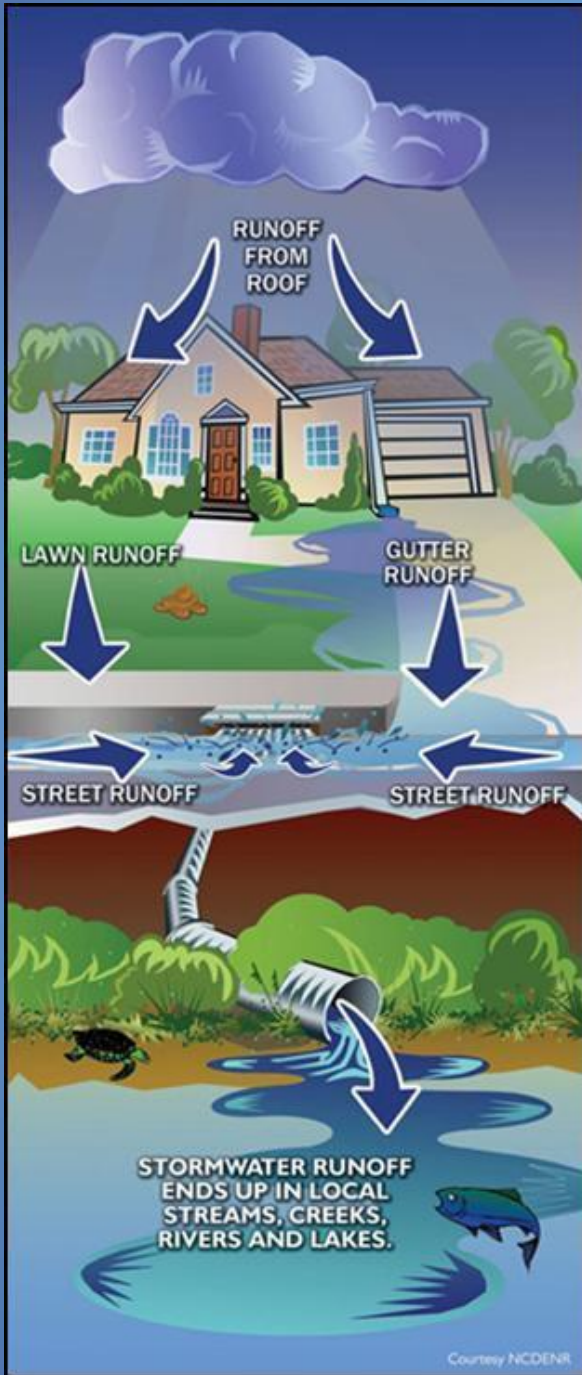
Tyler Clouse – Outreach Coordinator

Susan Sass – Billing Analyst

# What is stormwater ?







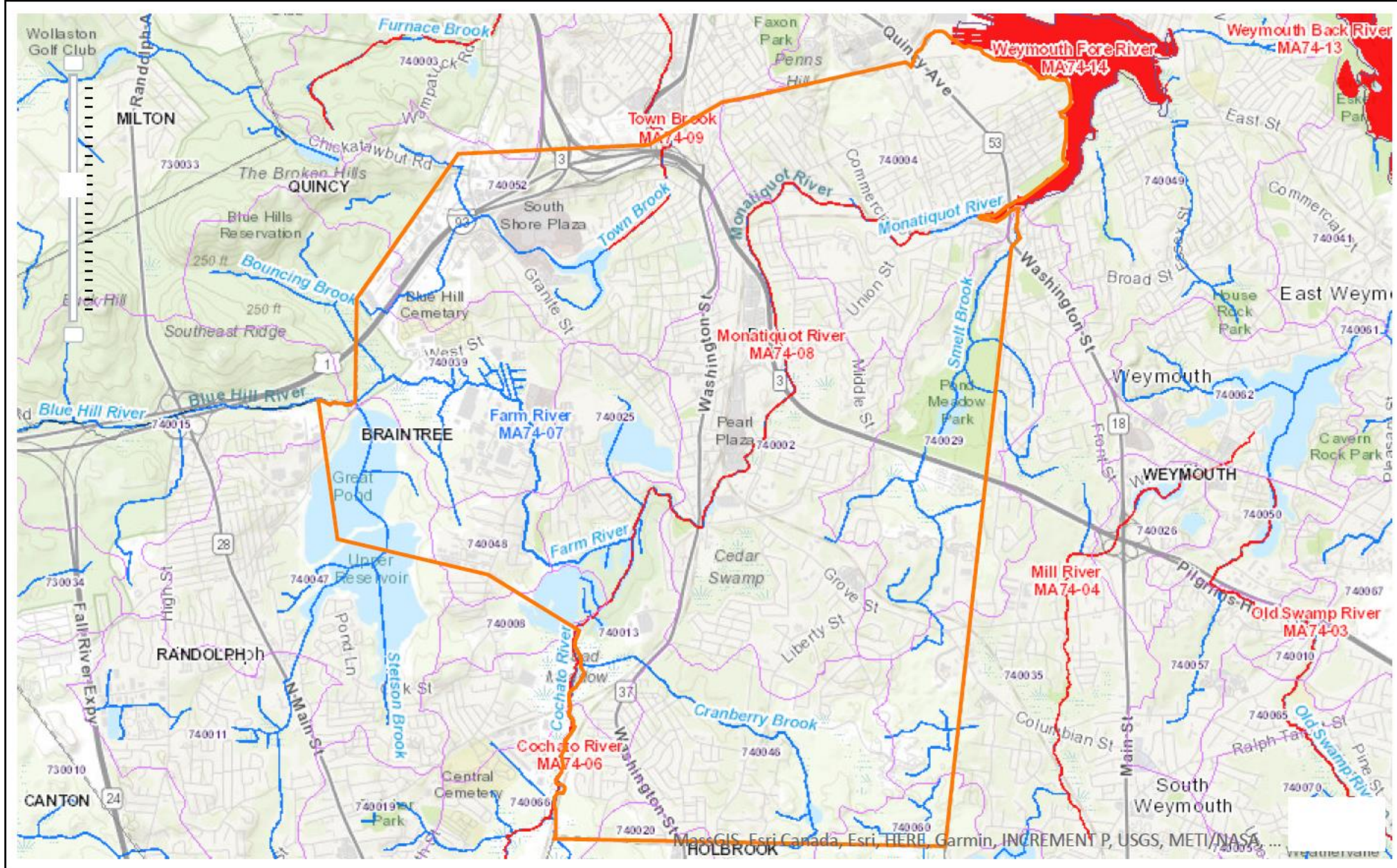
- 1) Rain and snow falls
- 2) As the precipitation moves it collects pollutants (dog poop, litter, car oil, etc.)
- 3) The storm drains collect the water, and send it through pipes
- 4) The pipes outlet at the nearest wetland or water body without any treatment
- 5) Collected pollutants impair our waterways impacting water quality in our community

What's in our waterways?










# List of Impaired Waters in Braintree

- Cochato River (*E. coli*)
- Monatiquot River (*E. coli*)
- Town Brook (*E. coli*)
- Weymouth Fore River (*E. coli*, *Fecal Coliform*)





### MassDEP 2012 Integrated List of Rivers

	Lakes		2 - Attaining some uses; other uses not assessed		4C - Impairment not caused by a pollutant
	Town Boundaries		3 - No uses assessed		5 - Impaired - TMDL required
	State Boundary		4A - Impaired - TMDL is completed		
	MassGIS Drainage Sub-basins				

# Stormwater

## Old Approach:

Get it off the road as soon as possible and send it to the Wetland.

## New Approach

- ✓ Treat pollution using specific on-site solutions.
- ✓ Improve the quality and quantity of the water.



## Old Approach

STORM DRAIN OUTFALL



STORM DRAIN INLET

The water that runs down the road during a storm will drain directly into the nearest waterbody without any treatment.



WHAT GOES IN HERE....



WILL END UP HERE....

# Old Approach:

- General Maintenance and Cleaning
- Culvert Repairs as needed
- Minimal Treatment
- Meet the min. requirements of the 2003 MS4-Stormwater Program





# New Approach Benefits:

- Improved community health, safety, and resiliency
  - Cleaner water bodies = more fishable, drinkable, and swimmable water bodies
  - Less frequent flooding
  - Safer roads
  - More aesthetically pleasing
  - Fewer beach closures
  - Improved habitat for our local wildlife
- Long range planning of drainage projects
  - Provide regular drainage maintenance to instill a ***proactive*** – not a ***reactive*** – approach
  - Avoidance of emergency repairs
- Meet all the requirements of the Clean Water Act and the 2016 EPA Phase II MS4 permit program

# New Solutions

## Biotreatment Areas

Aesthetically pleasing and good for the environment





# Parking Area Retrofits





# Detention Basins with Forebays





# How did we get to this new approach?

- Environmental regulations are changing
  - EPA Stormwater Program (Per Federal Clean Water Act)
  - Massachusetts DEP Stormwater Standards
  - Wetlands Protection Act
- Stricter requirements
- Fines on MS4 systems for non-compliance with permits (from \$50K to \$100K)
- Broader scientific understanding of our impacts on waterways and clean water

# Timeline of Stormwater Utility Adoption

**Dec. 2016 →**  
DPW explores  
departmental  
reorganization

**Jan. 2017 →**  
DPW re-org  
approved; SW  
utility proposed

**June 2017 →**  
MS4 Phase II  
delayed 1 year

**May 2018 →**  
present to  
Ways & Means  
Committee

**April 2018 →**  
present to Rules  
& Ordinances  
Committee

**March 2018 →**  
SW utility  
submitted with  
FY19 budget

**May 29, 2018 →**  
SW utility  
unanimously  
approved by TC

**July 2018 →**  
first SW utility  
bills are mailed  
out

**October 2018 →**  
staff of SW  
Division are  
hired



# 2016 Massachusetts MS4 General Permit

## **Six minimum control measures**

- Public education
- Public involvement
- Illicit discharge detection & elimination
- Construction site runoff
- Post-construction stormwater management
- Pollution prevention for municipal operations

# Necessary Changes

- Fully map the stormwater system with catchments
- Perform outfall screening/testing
- Retrofit sites with stormwater improvements
- Increase street sweeping program
- Clean all catch basins once they are over 50% full
- Report on all retrofits by tracking impairments.
- Increased site inspection
- Inspection/inventory of private stormwater systems
- Site Plan Review to include impairment removal
- Stricter stormwater ordinances at the local level

# Braintree Stormwater Infrastructure

- 326 Outfalls
- 3,384 Catch Basins
- 98 miles of Town drain pipe
- 158 culverts in public ways (est.)
- 2,134 Drain Manholes
- 398 Headwalls (81 at outfalls)
- 30 Detention Basins (est.)
- 8 Infiltration Systems (est.)
- And the majority are aging



# Barriers Impacting Implementation

- Lack necessary time and materials
- Lack drainage master plan
- Need more robust GIS system
- Need additional staff
  - Maintenance
  - Permitting/Regulatory

# Funding Approach

- Informed Decisions based on success stories
- Fair and Current
- Utilize Outside Grant Funding
- Cost Effective Solutions
- Long range planning
- Changes affect EVERYONE
  - Everyone uses and pays for water and sewer, so why is stormwater exempt?

# Current Stormwater Utility Fees

- Based on *Equivalent Residential Units (ERUs)*

$$\frac{25,090,560 ft^2}{9,030 \text{ Braintree households}} = \sim 2780 ft^2 = 1 \text{ ERU}$$

- Single Family, Two and Three Family properties
  - \$6.25/ Quarter or \$25/ Year
- 4+ Family, Commercial, Industrial & Tax Exempt
  - Property's total impervious surface in ft<sup>2</sup> divided by 2,780 to find the ERU value
  - Fee cap of \$2,917.50 (116.7 ERUs) per parcel
- **Added to Water and Sewer bills as a line item**



# Upcoming Stormwater Utility Fees

As Approved by Ordinance May 29, 2018

## ➤ Single Family, Two & Three Family properties

**July 1, 2020 - \$11.25/ Quarter or \$45/ Year**

**July 1, 2022 - \$15/ Quarter or \$60/ Year**

## ➤ 4+ Family, Commercial, Industrial & Tax Exempt

Same as above but per ERU (Equivalent Residential Unit) where total impervious area on each parcel is divided by 2,780 (1 ERU)

Example: Commercial property has one acre of roof, driveway and parking area that are all impervious to water infiltrating into the ground. Year 1 the cost would be  $43,560 / 2,780$  or 15.67 ERU's. This would then be multiplied by \$6.25/ Quarter or \$25/ Year at a total cost of \$97.94/ Quarter or \$391.75/ Year.

# Local Stormwater Utility Fees

Municipality	Annual Residential Rate
Shrewsbury	\$90 - \$325
Newton	\$100
Northampton	\$66.18 - \$268.13
Chicopee	\$100 - 160
Braintree	\$25

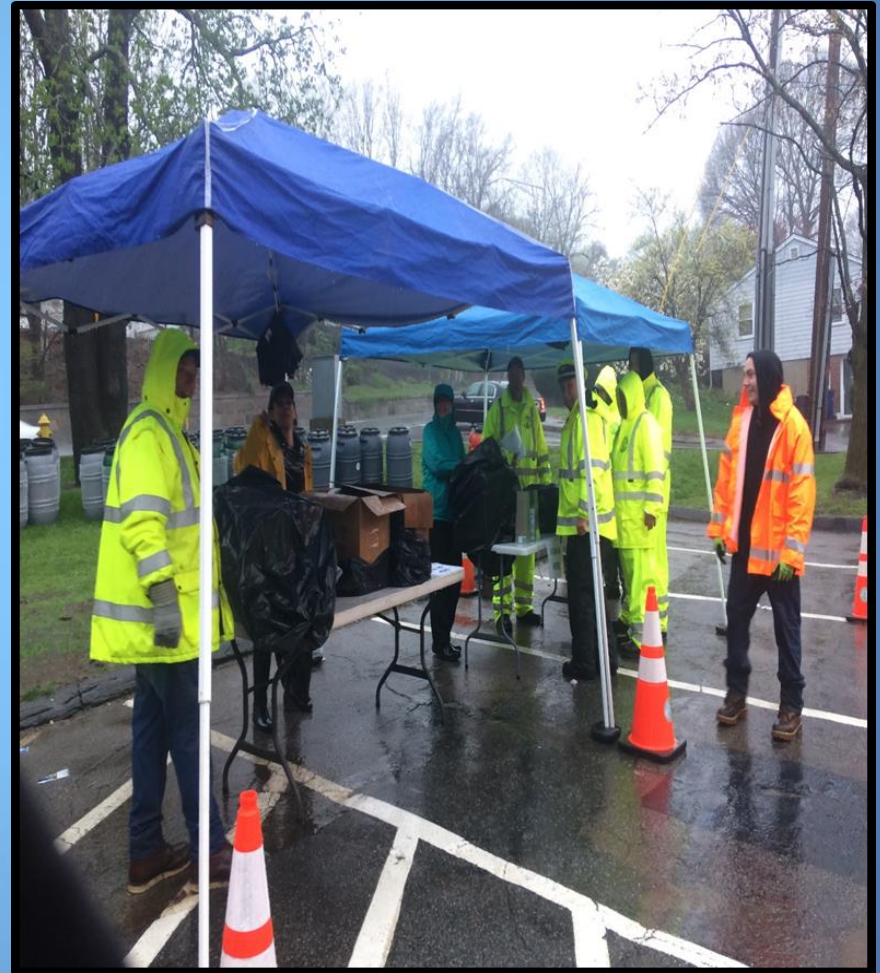
# Benefits of a Stormwater Utility

- Improve the quality of our waters
  - Swimmable, drinkable, fishable
- Long range planning of drainage projects
  - Cost-effective by prioritizing
- Provide regular drainage maintenance to instill a **proactive** approach, rather than **reactive**
- Avoid costly Emergency repairs by staying ahead of the crisis.
- Meet the terms of the New MS4 Permit



# What has the Stormwater Utility helped us accomplish?

- ***Full-time staff dedicated to Stormwater Management***
  - Revenue from Stormwater Utility funds the Manager, Billing Analyst, Outreach Coordinator
  - Increased focus on BMP development and maintenance
  - More time to focus on...



*2018 Rain Barrel Program Pick-Up*

# What has the Stormwater Utility helped us accomplish?

- ***Regional collaboration***
  - Worked with neighboring towns to form Fore River Stormwater Partnership
  - Participation in Statewide Stormwater Coalition
- ***Grant Projects***
  - Stetson St. Culvert Replacement Phase I
  - MAPC Climate Resiliency Program
  - Tree Boxes
  - Town-wide Stormwater BMP Retrofit Study





# What has the Stormwater Utility helped us accomplish?

Culvert Assessment for condition and maintenance



# What has the Stormwater Utility helped us accomplish?

- **Outreach** → fulfillment of MS4 Public Education & Outreach and Public Involvement & Participation requirements
  - Articles in town publications
  - School presentations
  - Tabling at Farmers' Markets
  - Rain barrel program
  - #ScoopThePoop campaign and pet waste outreach
  - Coastal Sweep Smiths Beach Cleanup







*Comments or Questions*